Notice of Allowability	Application No.	Applicant(s)	
	10/081,453	PUIG-OSES ET AL.	
	Examiner	Art Unit	
	Venkatesh Haliyur	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/25/2007*.

2. ☒ The allowed claim(s) is/are *1-9*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

1. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach or render obvious the limitations as in claims 1-9 by the applicant's invention to over come the problems associated in communication systems that use feedback mechanisms to determine the quality of the transmission media. Channel conditions are continuously conveyed on the reverse link. A remote station monitors the channel quality of the forward link and feeds it back to the base station via the Reverse Channel Quality Indicator Channel (R-CQICH). The transmission of a channel quality value on the R-CQICH is carried out in every slot of the R-CQICH. For slow moving or stationary remote stations, the transmission of a channel quality value on each slot allows the base station to accurately predict the state of the forward link. However, when a remote station is traveling at a high velocity, the condition of the reverse link worsens so that the base station cannot accurately decode the received channel quality values within a designated frame error rate. Moreover, the high velocity causes fast fading conditions that the base station cannot accurately estimate using outdated channel quality values.

Methods and apparatus of the applicant's invention addresses the problems stated above and in one embodiment of the present invention as recited in claim 1 by the applicant advantageously controls the operation of a quality feedback channel in a wireless communication system, comprising: a computer-readable memory element; and a processing element configured to execute a set of computer-executable instructions stored on the computer-

readable memory element, the set of said instructions for: determining a channel quality value associated with a transmission channel; determining a condition of the transmission channel; if the transmission channel condition is favorable, then transmitting the channel quality value over one slot of the channel quality feedback channel, wherein the condition of the transmission channel is determined to be favorable by comparing energy levels of symbols received on the transmission channel to a predetermined threshold amount; if the channel condition is not favorable, then transmitting the channel quality value over a plurality of slots of the channel quality feedback channel; and determining a transmission rate of the channel quality value over the feedback channel based on the condition of the transmission channel. In one aspect, a channel quality feedback message is spread and/or repeated over multiple slots of a CQICH frame. In this embodiment, the reception of the channel quality feedback becomes reliable because of the time diversity over the multiple slots. The events that trigger the repetition of channel quality feedback can be as follows:

a. The base station detects that the channel quality feedback is not reliable and signals the mobile station to repeat the same channel quality feedback over multiple slots, or

b. The remote station can detect that its velocity is too high. The remote station can either signal the base station that the channel quality feedback will be transmitted over multiple slots, as described above, or the remote station sends a request to the base station for sending the channel quality feedback message

over multiple slots. Upon receipt of an approval from the base station, the remote station starts the channel quality feedback in the above fashion. The repetition factors can be carried over the related signaling message, or the repetition factors can be predetermined as system parameters.

Patent Examiner

Venkatesh Haliyur

2/28/07

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SUPERVISORY PATENT EXAMINER